

Epidemiology

In most western countries, type 1 diabetes accounts for over 90% of childhood and adolescent diabetes, although less than half of individuals with type 1 diabetes are diagnosed before the age of 15 years. Type 2 diabetes is becoming more common in adolescents, particularly in the peri-pubertal period, and accounts for a significant proportion of youth onset diabetes in certain at risk populations (International Diabetes Federation, 2010).

Type 1 diabetes incidence varies greatly between different countries, within countries, and between different ethnic populations. Annual incidence rate for childhood type 1 diabetes in the United States is 19 per 100,000. There has been a well documented rise in the incidence within the United States, with a disproportionately greater increase in those under the age of 5 years. A seasonal variation in the presentation of new cases is well described, with the peak being in the winter months (International Diabetes Federation, 2010).

Susceptibility to autoimmune type 1 diabetes is associated with multiple genetic loci. HLA genes having the strongest known association and account for approximately 40% of familial clustering of type 1 diabetes. Linkage to specific combinations of alleles at the DRB1, DQA1 and DQB1 loci, with both susceptible or protective haplotypes (International Diabetes Federation, 2010).

The environmental triggers (chemical and/or viral) which initiate pancreatic beta cell destruction remain largely unknown, but the process usually begins months to years before the manifestation of clinical symptoms. Enterovirus infection has been associated with development of diabetes associated autoantibodies in some populations and enteroviruses have been detected in the islets of individuals with diabetes (International Diabetes Federation, 2010).

Despite familial aggregation, which accounts for approximately 10% of cases of type 1 diabetes, there is no recognizable pattern of inheritance. The risk of diabetes to an identical twin of a patient with type 1 diabetes is about 36%; for a sibling the risk is approximately 4% by age 20 years and 9.6% by age 60 years; compared with 0.5 % for the general population. Type 1 diabetes is 2-3 times more common in the offspring of diabetic men (3.6-8.5%) compared with diabetic women (1.3-3.6%) (International Diabetes Federation, 2010).

These guidelines do not establish a standard of care to be followed in every case. It is recognized that each case is different and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare guidelines for each. Accordingly these guidelines should guide care with the understanding that departures from them may be required at times.

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